UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,635	01/20/2004	William E. M. Jones	26680-A USA	8258

23307 7590 11/15/2006

SYNNESTVEDT & LECHNER, LLP
2600 ARAMARK TOWER
1101 MARKET STREET
PHILADELPHIA, PA 191072950

EXAMINER	
LEE, CYNTHIA K	

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/760,635	JONES, WILLIAM E. M.	
	Examiner	Art Unit	
	Cynthia Lee	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/16/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Priority

Acknowledgement has been made of applicant's claim for priority under 35 USC 119 (e).

Information Disclosure Statement

The Information Disclosure Statement (IDS) filed 8/16/2004 has been placed in the application file and the information referred to therein has been considered.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: the labels for several arrows are cut-off in Fig. 1. Also, the gap 62 in fig. 1 is not pointing to the gap. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

Pg. 6, line 14: The U.S. Patent number is incomplete.

Appropriate correction is required.

Claims Analysis

Regarding the limitation "having an electrolyte that includes sulfuric acid," it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ2d 1647 (1987). See MPEP 2114.

The limitations "having sufficient strength so as not to rupture in the event of an explosion of said gasses within said first containment" (claims 1 and 34) "fire-proof" (claim 2), "explosion proof" (claim 33) are considered to have been met by any of the materials listed in the Specification pg. 9, 1st full par.

Regarding claim 5, the courts have held that the method of forming the product is not germane to the issue of patentability of the product itself. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 8, and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The dependencies of claims 7, 8, and 10 are incorrect and thus, it is unclear from which claims they depend.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 5, 9-14, 15, 17, 18, 22-23, 26, 27, 33-34 are rejected under 35 U.S.C. 103(a) as unpatentable over Rao (US 5569552).

Rao discloses a lead-acid battery comprising multiple cells (5:1-8) located in the inner container. The battery comprises an integrally molded multi-walled container having an inner container and an outer container. A fluid compartment (applicant's insulating material, cooling fluid) is present for maintaining battery temperature which surrounds the periphery of the inner container (4:60-67).

Any thermoplastic material may be utilized which possesses the desired characteristics for molding battery containers, which comprises an ethylene-propylene impact-modified copolymer in which polypropylene is a major constituent (6:1-5) (applicant' leak-proof container, fire-proof container). The two containers are sealed together by heat sealing a cover onto both the inside and outside container (instant claim 5).

Since the inner container is inside the outer container, the outer container necessarily can hold all of the electrolyte should the inner container leak.

Rao does not disclose a first cover and a second cover. Rao discloses that both the inner and exterior container are sealed by one lid (fig. 10). However, it would have been obvious to one having ordinary skill in the art at the time the invention was made

to form separate lids for each container, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Claims 3, 4, 16, 19, 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao (US 5569552) as applied to claims 2 and 23 above, in view of Ovshinsky (US 2002/01824963).

Rao does not disclose a vent device (instant claims 3, 4, and 25). However, Ovshinsky teaches a battery comprising a pressure vent for releasing internal pressure of the battery to the surrounding atmosphere. It includes a vent housing having a hollow interior area in gaseous communication with the surrounding atmosphere and the interior of the battery case via the openings and a pressure release piston positioned within the hollow interior area. The vent is designed to release internal pressure in excess of about 120 pounds per square inch to ensure battery integrity, since the battery cans are generally rated for at most about 150 pounds per square inch [0071]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a pressure valve, as taught by Ovshinsky, to Rao's battery for the benefit of adding an additional safely feature and controlling the internal pressure of Rao's battery.'s battery.

Rao does not disclose that the second container is made of steel. However, Ovshinsky teaches a battery case formed from any material that is thermally conductive, mechanically strong and rigid, and is chemically inert to the battery chemistry, such as a

metal. Most preferably the case is formed from stainless steel [0065]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make Rao's outer case from stainless steel, as taught by Ovshinsky, for the benefit of protecting the battery from external forces.

Rao does not disclose a spring and damper (claim 19). However, Ovshinsky teaches a spring affixed in the axial opening within a terminal. The compression spring is positioned to urge the pressure release piston to compress the seal in the seal groove. The enclosed hollow interior area 21 functions to dampen the spring. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a spring as taught by Ovshinsky to Rao's battery for the benefit of adding a safety feature to prevent overpressurizing Rao's battery.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao (US 5569552) as applied to claim 2 above, in view of Hayes (US 4430396)

Rao does not disclose an insulating material disposed between battery posts and holes through which posts extend. However, Hayes teaches a battery terminal post seal that seals the battery post with the container. The sealing material effectively sealingly secures the battery post in the space and movably sealed to the battery case wall portion defining the opening (see fig. 1 and 3:25-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to insulate Rao's battery post with an insulating material for the benefit of fixing the battery terminals to

the case and to eliminate any leaks that may potentially arise between the battery post and the case.

Claims 20, 21, 30, 31, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao (US 5569552) as applied to claims 1, 23, and 34 above, in view of Binder (US 5178973).

Rao does not disclose a porous material that attenuates gas explosion. However, Binder teaches a battery having improved attenuation material comprising open-celled foam (6:6:27). The attenuation material fills the head space resulting in a macroporous structure effective for gas and electrolyte movement (4:60-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add open-celled foam at Rao's head space of the battery for the benefit of attenuating explosion of the battery.

Regarding claims 21 and 35, the presence of a porous material necessarily minimizes gas space.

Claims 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao (US 5569552) as applied to claim 23, in view of Evjen (US 3846178).

Rao modified by Binder teaches that the material is open-celled foam, not a closed cell foam. However, Evjen teaches a battery comprising blocks of closed cell foam to absorb explosive energy created in the headspace of the battery (2:65-70). It has been held by the court that the selection of a known material based on its suitability

for its intended use is *prima facie* obvious. Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945). Se MPEP 2144.07.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rao (US 5569552) in view of Ovshinsky (US 2002/0182493) as applied to claim 24 above, in view of Stocchiero (US 4898795).

Rao as modified by Ovshinsky does not disclose that the container is of one type of plastic and a cover of another type of plastic. However, Stocchiero teaches a lid for lead acid battery containing openings which are provided with elastic seats for the battery poles. Around each opening for the passage of the poles of a battery is provided an elastic diaphragm, the longitudinal profile of which is suited to be elastically deformable in its axial direction. When a lengthening of the pole of the battery eventually occurs during its life-span, it will be absorbed by the deformation of the diaphragm so that the lid will be subjected to stresses which might otherwise damage or disconnect it from the accumulator with serious consequences (abstract). The diaphragm is an expandable elastic and flexible (4:66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the battery lid of Rao modified by Ovshinsky for the benefit of avoiding cracks or other mechanical failure due to external forces. The Examiner notes that the battery casing on Rao is a ethylene-propylene copolymer, which is a thermoplastic and not an elastomer,

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rao (US 5569552) in view of Ovshinsky (US 2002/0182493) as applied to claim 24 above, in view of Wydom (US 1540155)

Rao as modified by Ovshinsky does not disclose an eye attached to said second containment. However, Wydom teaches an eye attached to an apex of a battery cover (4:15-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add an eye to the battery cover of Rao modified by Ovshinsky for the benefit of easier lifting of the battery.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rao (US 5569552) as applied to claim 23 above, in view of Misra (US 6475660).

Rao does not disclose that the positive and negative plates are positioned no more than about ¼ inch from a side of said first containment. However, Misra teaches of a lead acid battery wherein the positive and negative plates within the case are spaced away from the case interior surfaces in the direction of plate growth without contact between positive and negative plates. A suspension means is present to avoid the contact which reduces risk of enabling a short or internal stresses in the positive plate (3:20-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to keep the positive and negative plates away from the battery casing surface for the benefit of reducing a risk for short circuiting and stresses caused on the positive plate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's trainer, Susy Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ckl

Cynthia Lee

Patent Examiner

SUSY TSANG-FOSTER
PRIMARY EXAMINER